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FLSA: I/II - NON-EXEMPT
Bargaining Unit: GE
JCN: 3109/3110

County of El Dorado
November 1994

GIS SPECIALIST I/II
GEOGRAPHIC INFORMATION SYSTEMS TECHNICIAN I/II

DEFINITION

Under direct or general supervision, performs a variety of technical and work in support of the County's geographic information system (GIS) administration, including meeting with department personnel to discuss GIS product requests such as maps and reports, analyzing routine requests, generating requested products, and maintaining data regarding county land and facilities; and performs related duties as assigned.

SUPERVISION RECEIVED AND EXERCISED

Receives direct or general supervision from the Geographic Information Systems Manager. Exercises no direct supervision over staff.

CLASS CHARACTERISTICS

GIS Technician I: This is the entry-level paraprofessional support work in the development classification in the GIS Technician series. Initially under direct supervision, incumbents with basic GIS experience learn and perform specialized computer-based and graphical support work related to planning, engineering, land use, natural resources, and cultural and economic conditions. Incumbents become familiar with GIS base map creation and maintenance, and the processes necessary to collect, interpret, and display GIS data. As experience is gained, assignments become more varied and are performed with greater independence. Positions at this level usually perform most of computerized geographic files for the Geographic Information System; production of maps and reports; and performs related work as the duties required of the II level, but are not expected to function at the same skill level and usually exercise less independent discretion and judgment in matters related to work procedures and methods.

DISTINGUISHING CHARACTERISTICS

GIS Technician II: This Geographic Information System Specialist I is the entry and first working journey level for technical and paraprofessional GIS classification in the GIS Technician series. Incumbents perform the full range of technical and administrative work, including utilizing GIS software and utilities to create maps, tables, reports, and to align maps with existing source data and field observations. Positions at this level receive only occasional instruction or assistance as new or unusual situations arise, are fully aware of the operating procedures and policies of the work unit.

This class is distinguished from the GIS Analyst I/II in that the latter performs professional GIS duties, including application design, modification, programming and data base development support work. Initially, incumbents work under relatively close supervision performing the more routine work in GIS, scripting, database management, and user support work. The

~~Positions in the GIS Technician class series are flexibly staffed and positions at the Geographic Information System Specialist II level and incumbents may advance to are normally filled by advancement from the next higher I-level after gaining the knowledge, skill, experience, licenses, and demonstrating proficiency, certifications which meet the qualifications for and after demonstrating the ability to perform the work of the higher-level class.~~

~~Geographic Information System Specialist II is the journey level class in this series, fully competent to perform a wide range of GIS programming and data base development support work. These classes are distinguished from the GIS Applications Development Analyst series in that the latter provide programming and analyses support for the GIS mainframe and PC applications.~~

EXAMPLES OF DUTIES/TYPICAL JOB FUNCTIONS (Illustrative Only)

- ~~• Assists in developing requirements and design of GIS mapping layers.~~
- ~~• Performs data digitizing and entry into the GIS system and utilizing computer aided drafting software.~~
- ~~• Maintains records and builds data files.~~
- ~~• Produces map and analysis products.~~
- ~~• Performs map editing and quality control checking.~~
- ~~• Performs basic geoprocessing tasks as outlined and directed by supervisor.~~
- ~~• Assists in the preparation of various cartographic products support for presentation to the Board of Supervisors, County commissions and staff, and the public.~~
- ~~• Creates and maintains geographic and tabular data using digitizers, plotters, mini-computers, computer terminals and personal computers.~~
- ~~• Edits computer output for completeness and accuracy. Makes necessary corrections or updates.~~
- ~~• Assists with the preparation and maintenance of accurate records, correspondence, technical or narrative reports.~~
- ~~• Assists in conducting studies and utilizes the GIS to produce a wide range of maps and reports for use by county departments and other public and private agencies.~~
- ~~• Uses Arc Macro Language needed to complete GIS tasks.~~
- ~~•> Creates output, such as maps and graphs, using computer and geographic information system software and related equipment, programs including plotter, and presents information to users and answers questions the development of maps, charts, displays, presentations, graphics, brochures, and drawings.~~
- ~~➤ Enters/Prepares, modifies, and updates County base, property, acquisition, site maps, and brochures using GIS software and other digital media; researches and interprets data intosources, and verifies the accuracy and completeness of maps, legal descriptions, and other records.~~
- ~~➤ Maintains a database through application of coordinate geometry, keyboard entry of tabularincluding using a variety of cartographic techniques and concepts such as quantitative representation, coordinating systems, and transforming existing coverages or layers into a standard geo-referencing system with use of a shared topology; enters data, into a database using a variety of techniques, including manual digitizing-of maps, scanning, and automatic-conversion to-vectors, and conversion of other-sources-of digital-other databases.~~
- ~~•> Gathers and compiles data required for map preparation, and may research and recommend supplemental equipment and/or software to augment existing GIS capabilities.~~
- ~~• Prepares, maintains, and revises base property identification maps through: topographic and aerial photo interpretation; translation of land records; translation of field surveys and recorded plats. Drafts maps to conform to the California Coordinate and State plane Coordinate systems.~~
- ~~• Prepares, maintains, and revises information overlays to coincide with the base property map; i.e., zoning, soil types, utilities.~~
- ~~• Develops and produces reports using utility programs and GIS applications programs or other PC or AIX reporting packages.~~
- ~~• Assists in identifying data requirements for GIS applications.~~
- ~~• Customizes, maintains, and installs PC software.~~

- ~~• Assists in developing cartographic standards for symbology, projection, scale, and other mapping display features.~~

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- Develops and maintains a variety of maps from a variety of sources; explains technical information to non-technical end users, including assisting them in accessing and interpreting GIS information; trains end users on the use and functionality of the GIS system.
- Acts as point of contact for the day-to-day operations of the GIS program; troubleshoots system problems; responds to and resolves inquiries and complaints and escalates problems or issues to GIS Manager or designee as needed.
- Collects data using Global Positioning System (GPS) equipment and software; imports GPS data into existing database using GIS and GPS software.
- Maintains user and technical operating instructions and documentation; provides training to users and other technical staff, and advises on best practices.
- Stays abreast of new trends and innovations in technology related to GIS operations; researches, recommends, and evaluates vendor solutions and technologies; implements improvements; works with staff to maintain, revise, or improve operations and systems.
- Attends and participates in professional group meetings; stays abreast of new trends and innovations.
- Performs related duties as assigned.

QUALIFICATIONS

Some knowledge and abilities may be gained by employees at the entry (I) level while in a learning capacity.

Knowledge of:

- ⊕ Principles, practices, and terminology of a variety of database cartography including describing geographic and programming support work. topographic features.
- Digitizing Principles, practices, and data entry terminology of land use.
- Topological relationships and principles of geodatabase design.
- ⊕ Applicable federal, state, and local laws, codes, and regulations, including administrative and department policies and procedures.
- ⊕ Principles Drafting and practices of cartographic geographic production., both manual- and computer-based.
- ⊕ Principles and methods Methods of computer-aided design (CAD) and graphic simulation.
- Automated mapping Engineering mathematics, algebra, geometry, and trigonometry; mathematics used in the creation of maps, tables, and reports showing geographic and topographic information.
- Common algorithms and other automated reasoning used in the preparation of maps.
- Principles and techniques for working with groups and fostering effective team interaction to ensure teamwork is conducted smoothly.
- Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors, and County staff.
- The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Modern equipment and communication tools used for business functions and program, project, and task coordination.
- Computers and software programs (e.g., Microsoft software packages) to conduct, compile, and/or generate documentation.

Ability to:

- Utilize GIS software programming functions, tools, and utilities to produce maps, tables, and reports.
- Prepare complex plots in various printer and plotter environments.
- Perform technical GIS operations without immediate supervision.
- ⊕ Manipulate tabular and spatial processing methods and techniques. data.
- ⊕ Automated mapping Research and geographic information processing systems.

- ~~o Cartographic drafting, interpret data sources, and design.~~
- ~~o Standard office practices, verify their accuracy and procedures, completeness.~~

Skill in:

- ~~o Performing a variety of database and programming support work.~~
- ~~o Utilizing the computer and application software found in the County's GIS.~~
- ~~o Preparing correspondence, notes, and other written materials.~~
- ~~o Reading and interpreting technical data.~~
- ~~o Following complex—Understand and prepare complicated legal descriptions and exhibit maps.~~
- ~~o Convert data into useful GIS coverages, layers, or databases.~~
- ~~o Modify and manipulate various image file types (jpeg, tiff, etc.) for use in the GIS.~~
- ~~o Maintain, update, expand, and ensure the security of GIS database information.~~
- ~~o Make accurate mathematical calculations.~~
- ~~o Understand and follow oral and written instructions and established GIS standards; and completing assignments as directed.~~
- ~~o Communicating effectively—Effectively use computer systems, software applications, and modern business equipment to perform a variety of work tasks.~~
- ~~o Communicate clearly and concisely, both orally and in writing—, using appropriate English grammar and syntax.~~
- ~~o Use tact, initiative, prudence, and independent judgment within general policy, procedural, and legal guidelines.~~
- ~~o Establish and, maintain, and foster positive and effective working relationships with those contacted during in the course of work.~~

Education and Experience:

Any combination of the required experience, education, and training that would provide the essential knowledge, skills, and abilities is qualifying.

Geographic Information

~~GIS Specialist~~ Systems Technician I:

Equivalent to ~~a completion of an~~ an associate degree from an accredited educational institution with college-level coursework in a GIS or Land Survey technical program, information technology, or a closely related field.

Geographic Information Systems Technician II:

Equivalent to an associate degree from an accredited educational institution with college-level coursework in a GIS or Land Survey technical program, information technology, or a closely related field;

AND

Equivalent to two (2) years of college with major coursework in geography, cartography, environmental studies, land surveying or planning, engineering, management, technical GIS experience at a level comparable to the County's class of Geographic Information Systems Technician I.

Related work experience in automated drafting, geographic information systems, or a related field and one year of experience using PC or micro or mini-cadastral mapping, and computer system. Experience analysis is desirable.

Licenses and Certifications:

- Possession of, or ability to obtain, a valid California Driver's License by time of appointment and a satisfactory driving record.

PHYSICAL DEMANDS

Must possess mobility to work in a standard office setting and use standard office equipment, including a computer; vision to read printed materials and a computer screen; and hearing and speech to communicate in person, before groups, and over the telephone. This is sedentary office classification; standing and walking between work areas may be required. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate standard office equipment. Positions in this classification occasionally bend, stoop, kneel, reach, push, and pull drawers open and closed to retrieve and file information. Employees must possess the ability to lift, carry, push, and pull materials and objects weighing up to 25 pounds. Reasonable accommodations will be made for individuals on a case-by-case basis.

ENVIRONMENTAL CONDITIONS

Employees work in an automated mapping office environment (GIS, CAD, AM/FM), may be substituted for the education requirement on a year for year basis with moderate noise levels and controlled temperature conditions. Employees may interact with members of the public or with staff under emotionally stressful conditions while interpreting and enforcing departmental policies and procedures.

GIS Specialist II: In addition to the above, two years of experience performing programming or data base development support work at a level equivalent to the County's class of GIS Specialist I.

NOTE: The level and scope of the knowledge and skills listed above are related to the job duties defined under Distinguishing Characteristics.